

Appendix D

CLASSES OF CARCINOGENIC SUBSTANCES

Alkylating agents

α-Halo ethers
Bis(chloromethyl) ether
Methyl chloromethyl ether
Sulfonates
1,4-Butanediol dimethanesulfonate (myleran)
Diethyl sulfate
Dimethyl sulfate
Ethyl methanesulfonate
Methyl methanesulfonate
Methyl trifluoromethanesulfonate
1,3-Propanesultone
Epoxides
Ethylene oxide
Diepoxybutane
Epichlorohydrin
Propylene oxide
Styrene oxide
Aziridines
Ethylenimine
2-methylaziridine
Diazo, azo, and azoxy compounds
4-Dimethylaminoazobenzene
Electrophilic alkenes and alkynes
Acrylonitrile
Acrolein
Ethyl acrylate

Acylyating agents

β-Propiolactone
β-Butyrolactone
Dimethylcarbamyl chloride

Organohalogen compounds

1,2-Dibromo-3-chloropropane
Mustard gas (bis(2-chloroethyl)sulfide)
Vinyl chloride
Carbon tetrachloride
Chloroform
3-Chloro-2-methylpropane
1,2-Dibromoethane
1,4-Dichlorobenzene

Hydrazines

Hydrazine (and hydrazine salts)
1,2-Diethylhydrazine
1,1-Dimethylhydrazine
1,2-Dimethylhydrazine

N-Nitroso compounds

N-Nitrosodimethylamine
N-Nitro-*N*-alkylureas

Aromatic amines

4-Aminobiphenyl
Benzidine (4,4'-diaminobiphenyl)
α-Naphthylamine
β-Naphthylamine
Aniline
o-Anisidine (2-methoxyaniline)
2,4-Diaminotoluene
o-Toluidine

Aromatic hydrocarbons

Benzene
Benz[*a*]anthracene
Benzo[*a*]pyrene

Natural products (including antitumor drugs)

Adriamycin
Aflatoxins
Bleomycin
Cisplatin
Progesterone
Reserpine
Safrole

Miscellaneous organic compounds

Formaldehyde (gas)
Acetaldehyde
1,4-Dioxane
Ethyl carbamate (urethane)
Hexamethylphosphoramide
2-Nitropropane
Styrene

Appendix D

CLASSES OF CARCINOGENIC SUBSTANCES

Organohalogen compounds (continued)

1,2-Dichloroethane
2,2-Dichloroethane
1,3-Dichloropropene
Hexachlorobenzene
Methyl iodide
Tetrachloroethylene
Trichloroethylene
2,4,6-Trichlorophenol

Miscellaneous organic compounds (continued)

Thiourea
Thioacetamide

Miscellaneous inorganic compounds

Arsenic and certain arsenic compounds
Chromium and certain chromium compounds
Thorium dioxide
Beryllium and certain beryllium compounds
Cadmium and certain cadmium compounds
Lead and certain lead compounds
Nickel and certain nickel compounds
Selenium sulfide

Reference

National Research Council. Prudent Practices in the Laboratory. National Academy Press, Washington D.C., 1995.

Appendix E

EXAMPLES OF SELECT CARCINOGENS

2-Acetylaminofluorene	Dimethyl sulfate
Acrylamide	Ethylene dibromide
Acrylonitrile	Ethylene oxide
Aflatoxins	Ethylenimine
4-Aminobiphenyl	Formaldehyde
Aresenic and certain arsenic compounds	Hexamethylphosphoramide
Asbestos	Hydrazine
Azathioprine	Melphalan
Barium chromate	4-4'-Methylene-bis[2-chloroaniline]
Benzene	Mustard gas (bis(2-chloroethyl)sulfide)
Benzidine	N, N-Bis(2-chloroethyl)-2-naphthylamine (chlornaphazine)
Bis(chloromethyl)ether	α-Naphthylamine
1,4-Butanediol dimethylsulfonate (myleran)	β-Naphthylamine
Chlorambucil	Nickel carbonyl
Chloromethyl methyl ether	4-Nitrobiphenyl
Chromium and certain chromium compounds	N-Nitrosodimethylamine
Cyclophosphamide	β-Propiolactone
1,2-Dibromo-3-chloropropane	Thorium dioxide
3,3'-Dichlorobenzidine (and its salts)	Treosulfan
Diethylstilbestrol	Vinyl chloride
4-Dimethylaminoazobezene	

Reference

National Research Council. Prudent Practices in the Laboratory. National Academy Press, Washington D.C., 1995.